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libvirt: Stable API

- Management of hypervisor(s)
- Stable API for application developers
- Isolation from Xen HV instability
- Isolation from XenD protocol changes
- Formalized error reporting/handling
Xen architecture

App 1

App 2

App 3

XenD

XenStore

Dom0 kernel hypercall API

libvirt
virtualization API
libvirt: Xen Architecture

![Diagram showing the Xen Architecture with libvirt at the center, connected to App 1, App 2, App 3, XenD, XenStore, and Dom0 kernel hypercall API.]
libvirt: Standard API

- Vendor neutral, community project
- HV agnostic (Xen, QEMU, VMWare, ...)
- Formal XML definition of VM
- LGPL licensed
- Distributed in FC5+, RHEL-5+
libvirt: Driver Model

Public API

Internal Driver API

Driver Backends
- xen HV
- xend
- xenstore
- proxy
- test
- qemu

Backend Protocol
libvirt: Simple API

- Core API in C
- Python & Perl bindings
- Shell scriptable tool (virsh)
- Mock hypervisor for testing
libvirt: Xen Architecture

- XenD SEXPR/HV: local Dom0 only
- Root: full privileged r/w
- Non-root: unprivileged r/o
- Proxy: unprivileged access to HV
- XenAPI: enables remote control
Libvirt: Xen Architecture

App 1

App 2

App 3

libvirt

XenD

XenStore

Dom0 kernel hypercall API
Libvirt: Xen Proxy Architecture
libvirt: Applications

- virsh command line admin tool/shell
- gnome-applet-vm: VM monitoring
- virt-manager: desktop manager app
- xeninst: local provisioning of VMs
- cobbler/koan: kickstart over a network
- spectre: performance monitoring
- rhn: red hat network management
libvirt: Future Development

- Block / net I/O stats (discussion)
- Block / net hot-add/remove (discussion)
- Xen inactive domains (working prototype)
- QEMU driver backend (working prototype)
- XenAPI driver backend (to be started)
http://libvirt.org/